Claims:

Sub B1

1. A method of preserving and/or reacquiring synchronisation of ATM cells in an ATM cell transmission system, the ATM cells each including a header and payload, the method including the steps of encoding the header and payload and interleaving them along with synchronisation data within a transmission frame.

2. A method as claimed in claim 1 wherein error correction is applied separately to the header and payload prior to framing them in the transmission frame.

Sub A1

3. A method as claimed in claim 1 or 2 wherein the error correction corresponds to Reed Solomon forward error correction.

4. A method as claimed in claim 3 wherein the Reed Solomon encoding is applied to the header and payload separately following which the encoded header is interleaved with the synchronisation data and encoded payload.

5. A method as claimed in claim 1 wherein the synchronisation data corresponds to a synchronisation word selected to have low auto and cross-correlation characteristics.

6. A method as claimed in claim 1 including the further step of eliminating/using empty/idle ATM cells in such a way that input and output data rates of an ATM link over which the processed ATM cells are transmitted, are substantially matched.

7. A method of preserving and/or reacquiring synchronisation of ATM cells in an ATM cell transmission system, comprising the steps of:

at a first location, for a plurality of transmission frames each containing an encoded ATM cell, interleaving synchronisation data within said frames, prior to transmission via an ATM transmission link;

transmitting the plurality of processed frames via a transmission link;

receiving, at a second location, the framed ATM cells;

de-interleaving the received frames in order to extract the synchronisation data; and

monitoring the synchronisation data and depending on whether a predetermined number of incorrect/correct synchronisation data elements are detected, establishing synchronisation, triggering resynchronisation or triggering attempted reacquisition of synchronisation.

8. A method as claimed in claim 1 or 7 wherein the synchronisation data is interleaved throughout the ATM cell in such a way as to render the ATM cell substantially insensitive to interference targeted at cell boundaries.

9. An apparatus for manipulating ATM cells in an ATM transmission system adapted to operate in accordance with the method of any of claims 1 to 8.

10. A method of preserving and/or reacquiring synchronisation of ATM cells in an ATM cell transmission system substantially as herein described with reference to figures 2 to 5.

11. An apparatus for manipulating ATM cells in an ATM transmission system substantially as herein described with reference to figures 2 to 5.